



# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

NATIONAL EXPOSURE RESEARCH LABORATORY

HUMAN EXPOSURE & ATMOSPHERIC SCIENCES DIVISION (MD-D205-03)

Research Triangle Park, NC 27711

919-541-3737

Office of  
Research and Development

## LIST OF DESIGNATED REFERENCE AND EQUIVALENT METHODS

**Issue Date: April 3, 2002**

([www.epa.gov/ttn/amtic/criteria.html](http://www.epa.gov/ttn/amtic/criteria.html))

These methods for measuring ambient concentrations of specified air pollutants have been designated as "reference methods" or "equivalent methods" in accordance with Title 40, Part 53 of the Code of Federal Regulations (40 CFR Part 53). Subject to any limitations (e.g., operating range or temperature range) specified in the applicable designation, each method is acceptable for use in state or local air quality surveillance systems under 40 CFR Part 58 unless the applicable designation is subsequently canceled. Automated methods for pollutants other than PM<sub>10</sub> are acceptable for use only at shelter temperatures between 20°C and 30°C and line voltages between 105 and 125 volts unless wider limits are specified in the method description.

Prospective users of the methods listed should note (1) that each method must be used in strict accordance with its associated operation or instruction manual and with applicable quality assurance procedures, and (2) that modification of a method by its vendor or user may cause the pertinent designation to be inapplicable to the method as modified. (See Section 2.8 of Appendix C, 40 CFR Part 58 for approval of modifications to any of these methods by users.)

Further information concerning particular designations may be found in the *Federal Register* notice cited for each method or by writing to the National Exposure Research Laboratory, Human Exposure and Atmospheric Sciences Division (MD-46), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711. Technical information concerning the methods should be obtained by contacting the source listed for each method. Source addresses are listed at the end of the listing of methods, except for the addresses for lead method sources, which are given with the method. New analyzers or PM<sub>10</sub> samplers sold as reference or equivalent methods must carry a label or sticker identifying them as designated methods. For analyzers or PM<sub>10</sub> samplers sold prior to the designation of a method with the same or similar model number, the model number does not necessarily identify an analyzer or sampler as a designated method. Consult the manufacturer or seller to determine if a previously sold analyzer or sampler can be considered a designated method or if it can be upgraded to designation status. Analyzer users who experience operational or other difficulties with a designated analyzer or sampler and are unable to resolve the problem directly with the instrument manufacturer may contact EPA (preferably in writing) at the above address for assistance.

This list will be revised as necessary to reflect any new designations or any cancellation of a designation currently in effect. The most current revision of the list will be available for inspection at EPA's Regional Offices, and copies may be obtained at the Internet site identified above or by writing to the National Exposure Research Laboratory at the address specified above.

### Most Recent Designations

Teledyne Advanced Pollution Instrumentation Model 300E CO Analyzer	Nov. 21, 2001
Tisch Environmental Model TE-6070 PM <sub>10</sub> High Volume Sampler	April 02, 2002
BGI Models PQ200-VSCC and PQ200A-VSCC PM <sub>2.5</sub> Sampler	April 02, 2002
R & P Partisol®-FRM Model 2000 PM-2.5 FEM PM <sub>2.5</sub> Sampler	April 02, 2002
R & P Partisol® Model 2000 PM-2.5 FEM PM <sub>2.5</sub> Audit Sampler	April 02, 2002
R & P Partisol®-Plus Model 2025 PM-2.5 FEM PM <sub>2.5</sub> Seq. Sampler	April 02, 2002
Environnement S.A Model AC32M Nitrogen Oxides Analyzer	April 02, 2002

**CARBON MONOXIDE****Beckman Model 866 CO Monitoring System***Automated Reference Method: RFCA-0876-012*

"Beckman Model 866 Ambient CO Monitoring System," consisting of the following components: Pump/Sample-Handling Module; Gas Control Panel; Model 865-17 Analyzer Unit; Automatic Zero/Span Standardizer; operated with a 0-50 ppm range, a 13 second electronic response time, with or without any of the following options: Current Output Feature; Bench Mounting Kit; Linearizer Circuit.

[*Federal Register*: Vol. 41, page 36245, 08/27/76]

**Bendix/Combustion Engineering Model 8501-5CA CO Analyzer***Automated Reference Method: RFCA-0276-008*

"Bendix or Combustion Engineering Model 8501-5CA Infrared CO Analyzer", operated on the 0-50 ppm range and with a time constant setting between 5 and 16 seconds, with or without any of the following options: Rack Mounting With Chassis Slides; Rack Mounting Without Chassis Slides; External Sample Pump.

[*Federal Register*: Vol. 41, page 7450, 02/18/76]

**Dasibi Model 3003 CO Analyzer***Automated Reference Method: RFCA-0381-051*

"Dasibi Model 3003 Gas Filter Correlation Dasibi Environmental CO Analyzer," operated on the 0-50 ppm range, with a sample particulate filter installed on the sample inlet line, with or without any of the following options:

3-001 Rack Mount 3-003 BCD Digital Output3-007 Zero/Span Module Panel

3-002 Remote Zero And Span 3-004 4-20 Milliamp Output

[*Federal Register*: Vol. 46, page 20773, 04/07/81]

**Dasibi Model 3008 CO Analyzer***Automated Reference Method: RFCA-0488-067*

"Dasibi Model 3008 Gas Filter Correlation CO Analyzer," operated on the 0-50 ppm range, with a time constant setting of 60 seconds, a particulate filter installed in the analyzer sample inlet line, with or without use of the auto zero or auto zero/span feature, and with or without any of the following options: N-0056-A RS-232-C Interface; S-0132-A Rack Mounting Slides; Z-0176-S Rack Mounting Brackets.

[*Federal Register*: Vol. 53, page 12073, 04/12/88]

**Environnement S.A. Model CO11M CO Analyzer***Automated Reference Method: RFCA-0995-108*

"Environnement S.A. Model CO11M Ambient Carbon Monoxide Analyzer," operated on a full scale range of 0 - 50 ppm, at any temperature in the range of 15 °C to 35 °C, with a 5-micron PTFE sample particulate filter, with the following software settings: Automatic response time ON; Minimum response time set to 40 seconds (RT 13); Automatic ZERO-REF cycle programmed every 24 hours; and with or without any of the following options: <sup>2</sup> RS232-422 Serial Interface; Internal Printer.

[*Federal Register*: Vol. 60, page 54684, 10/25/95]

**Horiba Models AQM-10, AQM-11, and AQM12 CO Monitoring Systems***Automated Reference Method: RFCA-1278-033*

"Horiba Models AQM-10, AQM-11, and AQM12 Ambient CO Monitoring Systems," operated on the 0-50 ppm range, with a response time setting of 15.5 seconds, with or without any of the following options: AIC-101 Automatic Indication Corrector; VIT-3 Non-Isolated Current Output; ISO-2 And DCS-3 Isolated Current Output.

[*Federal Register*: Vol. 43, page 58429, 12/14/78]

**Horiba Model APMA-300E CO Monitoring System***Automated Reference Method: RFCA-1180-048*

"Horiba Model APMA-300E Ambient Carbon Monoxide Monitoring System," operated on the 0-20 ppm<sup>1</sup>, the 0-50 ppm, or the 0-100 ppm range with a time constant switch setting of No. 5. The monitoring system may be operated at temperatures between 10°C and 40°C. (This method was originally designated as "Horiba Model APMA 300E/300SE Ambient Carbon Monoxide Monitoring System".)

[*Federal Register*: Vol. 45, page 72774, 11/03/80]

**Horiba Model APMA-360 CO Monitor***Automated Reference Method: RFCA-0895-106*

"Horiba Instruments Incorporated, Model APMA-360 Ambient Carbon Monoxide Monitor," operated on the 0-50 ppm range, with the Line Setting set to "MEASURE", with the Analog Output set to "MOMENTARY VALUE", and with or without the following options:<sup>2</sup> 1) Rack Mounting Plate and Side Rails 2) RS-232 Com Port.

[*Federal Register*: Vol. 60, page 39382, 08/02/95]

**MASS-CO, Model 1 CO Analyzer***Automated Reference Method: RFCA-1280-050*

"MASS-CO, Model 1 Carbon Monoxide Analyzer," operated on a range of 0-50 ppm, with automatic zero and span adjustments at time intervals not to exceed 4 hours, with or without the 100 millivolt and 5 volt output options. The method consists of the following components: (1) Infra-2 (Uras 2) Infrared Analyzer Model 5611-200-35, (2) Automatic Calibrator Model 5869-111, (3) Electric Gas Cooler Model 7865-222 or equivalent with prehumidifier, (4) Diaphragm Pump Model 5861-214 or equivalent, (5) Membrane Filter Model 5862-111 or equivalent, (6) Flow Meter Model SK 1171-U or equivalent, (7) Recorder Model Mini Comp DN 1/192 or equivalent. NOTE: This method is not now commercially available.

[*Federal Register*: Vol. 45, page 81650, 12/11/80]

**Monitor Labs Model 8310 CO Analyzer***Automated Reference Method: RFCA-0979-041*

"Monitor Labs Model 8310 CO Analyzer," operated on the 0-50 ppm range, with a sample inlet filter, with or without any of the following options:

02A Zero/Span Valves	04B Pump (50 Hz)	07A Zero/Span Valve Power Supply
03A Floor Stand	05A CO Regulator	08A Calibration Valves
04A Pump (60 Hz)	06A CO Cylinder	9A,B,C,D Input Power Transformer

[Federal Register: Vol. 44, page 54545, 09/20/79 and Vol. 45, page 2700, 01/14/80]

#### **Monitor Labs/Lear Siegler Model 8830 CO Analyzer**

*Automated Reference Method: RFCA-0388-066*

"Monitor Labs or Lear Siegler Model 8830 CO Analyzer," operated on the 0-50 ppm range, with a five micron Teflon filter element installed in the rear-panel filter assembly, with or without any of the following options: 2 - Zero/Span Valve Assembly; 3 - Rack Assembly; 4 - Slide Assembly; 7 - 230 VAC, 50/60 Hz.

[Federal Register: Vol. 53, page 7233, 03/07/88]

#### **Monitor Labs/Lear Siegler Model ML9830,**

*Automated Reference Method: RFCA-0992-088*

#### **Monitor Labs Model ML9830B, or Wedding & Associates Model 1020 CO Analyzers**

"Lear Siegler Measurement Controls Corporation or Monitor Labs Model ML9830, Monitor Labs Model ML9830B, or Wedding & Associates, Inc. Model 1020 Carbon Monoxide Analyzer," operated on any full scale range between 0-5.0 ppm<sup>1</sup> and 0-100 ppm, at any temperature in the range of 15°C to 35°C, with the service switch on the secondary panel set to the *In* position, with the following menu choices selected: Range: *5.0 ppm to 100.0 ppm*; Over-ranging: *Enabled* or *Disabled*; Background: *Not Disabled*; Calibration: *Manual* or *Timed*; Diagnostic Mode: *Operate*; Filter Type: *Kalman*; Pres/Temp/Flow Comp: *On*; Span Comp: *Disabled*; and as follows: **Model ML9830:** with a five-micron Teflon® filter element installed internally, with the 50-pin I/O board installed on the rear panel configured at any of the following output range settings: Voltage, 0.1 V, 1 V, 5 V, 10 V; Current, 0-20 mA, 2-20 mA and 4-20 mA; and with or without any of the following options: Valve Assembly for External Zero/Span (EZS); Valve Assembly for Internal Zero/Span (IZS); Rack Mount Assembly; Internal Floppy Disk Drive. **Models ML9830B and 1020:** with either a vendor-supplied or equivalent user-supplied five micron Teflon® filter and exhaust pump, and with or without any of the following options: Valve Assembly for External Zero/Span (EZS); 50-pin I/O board; Rack Mount Assembly; High Pressure Span Valve; hinged, fold-down front panel.

[Federal Register: Vol. 57, page 44565, 09/28/92]

#### **MSA/LIRA Model 202S CO Analyzer System**

*Automated Reference Method: RFCA-0177-018*

"LIRA Model 202S Air Quality Carbon Monoxide Analyzer System," consisting of a LIRA Model 202S optical bench (P/N 459839), a regenerative dryer (P/N 464084), and rack-mounted sampling system; operated on a 0-50 ppm range, with the slow response amplifier, with or without any of the following options: Remote Meter; Remote Zero And Span Controls; 0-1, 5, 20, Or 50 mA Output; 1-5, 4-20, Or 10-50 mA Output; 0-10 Or 100 mV Output; 0-1, 5, Or 10 Volt Output.

[Federal Register: Vol. 42, page 5748, 01/31/77]

#### **Teledyne Advanced Pollution Instrumentation, Inc. Models 300 or 300E**

*Automated Reference Method: RFCA-1093-093*

"Teledyne Advanced Pollution Instrumentation, Inc. Models 300 or 300E Gas Filter Correlation Carbon Monoxide Analyzer," operated on any full scale range between 0-10 ppm and 0-50 ppm, at any temperature in the range of 15°C to 35°C for **Model 300** or 10°C to 40°C for **Model 300E**, with a 5-micron TFE filter element installed in the filter assembly, with the dynamic zero and span adjustment set to *Off* for **Model 300**, and with or without any of the following options<sup>2</sup>: Option 50, Zero/Span Valves with pressurized span gas and shutoff valve; Option 51, Zero/Span Valves with pressurized span gas and shutoff valve and Internal Zero Air Generator; Option 52, Zero/Span Valves; Option 53, Zero/Span Valves with Internal Zero Air Generator; Rack Mount with slides; RS-232 serial port with status outputs; and (for **Model 300E**) 4-20 mA isolated outputs.

[Federal Register: Vol. 58, page 58166, 10/29/93]

#### **Thermo Electron/Thermo Environmental Instruments Models 48, 48C**

*Automated Reference Method: RFCA-0981-054*

"Thermo Electron or Thermo Environmental Instruments, Inc. Model 48 Gas Filter Correlation Ambient CO Analyzer," operated on the 0-50 ppm range, with a time constant setting of 30 seconds, with or without any of the following options:

48-001 Teflon Particulate Filter	48-010 Internal Zero Air Package
48-002 19 Inch Rack Mount	48-488 GPIB (General Purpose Interface Bus) EEEE-488

#### 48-003 Internal Zero/Span Valves with Remote Activation

"Thermo Electron or Thermo Environmental Instruments, Inc. Model 48C Gas Filter Correlation Ambient CO Analyzer," operated on any measurement range between 0-1 ppm<sup>1</sup> and 0-100 ppm, with any time average setting from 10 to 300 seconds, with temperature and/or pressure compensation on or off, operated at temperatures between 20 °C and 30 °C, with or without any of the following options<sup>2</sup>:

100 Teflon particulate filter	410 Internal Zero Air Scrubber
200 Carrying Handle	610 4-20 mA current output
210 Rack mounts	720 RS-232 Interface
320 Internal Zero/Span and Sample/Calibration Solenoid Valves	770 RS-485 Interface
330 Internal Zero/Span and Sample/ Calibration Solenoid Valves with Remote I/O Activation	

[Federal Register: Vol. 46, page 47002, 09/23/81]

**NOTES**

<sup>1</sup> Users should be aware that designation of this analyzer for operation on ranges less than the range specified in the performance specifications for this analyzer (40 CFR 53, Subpart B) is based on meeting the same absolute performance specifications required for the specified range. Thus, designation of these lower ranges does not imply commensurably better performance than that obtained on the specified range.

<sup>2</sup> This analyzer is approved for use, with proper factory configuration, on either 50 or 60 Hertz line frequency and nominal power line voltages of 115 Vac and 230 Vac.

**Sources or Contacts for Designated Reference and Equivalent Methods**

ABB Process Analytics P.O. Box 831 Lewisburg, WV 24901 (304) 647-4358	Shinjuku-ku Tokyo 169-8648, Japan <a href="http://www.toadkk.co.jp">www.toadkk.co.jp</a>	Monitor Labs, Inc. 74 Inverness Drive Englewood, CO 80112-5189 (800) 422-1499 <a href="http://www.monitorlabs.com">www.monitorlabs.com</a>
(Teledyne) Advanced Pollution Instrumentation, Inc. 6565 Nancy Ridge Drive San Diego, CA 92121-2251 (619) 657-9800 <a href="http://www.advpol.com">www.advpol.com</a>	Environnement S.A 111, bd Robespierre 78300 Poissy, France <a href="http://www.environnement-sa.com">www.environnement-sa.com</a> Instruments also available from: Altech/Environnement U.S.A. 2623 Kaneville Court Geneva, IL 60134 (630) 262-4400 rbrown@altechusa.com	Opsis AB, Furulund, Sweden Instruments also available from: Opsis, Inc. 146-148 Sound Beach Avenue Old Greenwich, CT 06870 (203) 698-1810 <a href="http://www.opsis.se">www.opsis.se</a>
Andersen Instruments 500 Technology Court Smyrna, GA 30082-9211 (800) 241-6898 <a href="http://www.anderseninstruments.com">www.anderseninstruments.com</a>	Environics, Inc. 69 Industrial Park Rd. E. Tolland, CT 06084-2805 (203) 429-0077 <a href="http://www.environics.com">www.environics.com</a>	State of Oregon Department of Environmental Quality Air Quality Division 811 S.W. Sixth Avenue Portland, OR 97204
ASARCO Incorporated 3422 South 700 West Salt Lake City, UT 84119 (801) 262-2459	Graseby GMW [Refer to Andersen Instruments]	PCI Ozone Corp. One Fairfield Crescent West Caldwell, NJ 07006 (201) 575-7052 <a href="http://www.pci-wedeco.com">www.pci-wedeco.com</a>
Beckman Instruments, Inc. Process Instruments Division 2500 Harbor Blvd. Fullerton, CA 92634 (714) 871-4848	Horiba Instruments Incorporated 17671 Armstrong Avenue Irvine, CA 92714 (800) 446-7422 <a href="http://www.horiba.com">www.horiba.com</a>	Phillips Electronic Instruments, Inc. 85 McKee Drive Mahwah, NJ 07430
Bendix [Refer to ABB Process Analytics]	Lear Siegler [Refer to Monitor Labs, Inc.]	Rupprecht & Patashnick Co., Inc. 25 Corporate Circle Albany, NY 12203 (518) 452-0065 <a href="http://www.rpcocom">www.rpcocom</a>
BGI Incorporated 58 Guinan Street Waltham, MA 02451 (781) 891-9380 <a href="mailto:bgiinc@attglobal.net">www.bgiusa.com</a> (bgiinc@attglobal.net)	Commonwealth of Massachusetts Department of Environmental Quality Engineering Tewksbury, MA 01876	Sibata Scientific Technology, Ltd. 1-25, 3-chome Ikenohata, Taito-ku Tokyo 110, Japan 81-3(3822)2272 TTani@email.msn.com
Columbia Scientific Industries 11950 Jollyville Road Austin, TX 78759 (800) 531-5003	Met One Instruments, Inc. 1600 Washington Blvd. Grants Pass, OR 97526 (541) 471-7111 <a href="http://www.metone.com">www.metone.com</a> (metone@metone.com)	Teledyne Analytical Instruments 16830 Chestnut Street City of Industry, CA 91748 (626) 934-1622
Combustion Engineering [Refer to ABB Process Analytics]	McMillan [Refer to Columbia Scientific Industries]	Thermo Environmental Instruments, Inc. 8 West Forge Parkway Franklin, MA 02038 (508) 520-0430 <a href="http://www.thermoei.com">www.thermoei.com</a>
Dasibi Environmental Corp. 506 Paula Avenue Glendale, CA 91201 (818) 247-7601 <a href="http://www.dasibi.com">www.dasibi.com</a>	Mine Safety Appliances 600 Penn Center Blvd. Pittsburgh, PA 15235-5810 (412) 273-5101	
DKK-TOA Corporation 29-10, 1-Chome, Takadanobaba,		

Tisch Environmental, Inc.  
145 S. Miami Avenue  
Village of Cleves, OH 45002  
(513) 467-9000  
[www.tisch-env.com](http://www.tisch-env.com)

URG Corporation  
116 Merritt Mill Road  
Chapel Hill, NC 27516  
(919) 942-2753

U.S. EPA  
National Exposure Research Laboratory  
Human Exposure & Atmospheric  
Sciences Division (MD-46)  
Research Triangle Park, NC 27711  
(919) 541-2622  
[www.epa.gov/heasd](http://www.epa.gov/heasd)

Wedding and Associates, Inc.  
[Refer to Thermo Environmental  
Instruments, Inc.]

# U.S. EPA REFERENCE & EQUIVALENT METHODS FOR AMBIENT AIR

April 03, 2002

<u>Method</u>	<u>Designation Number</u>	<u>Method Code</u>	<u>Method</u>	<u>Designation Number</u>	<u>Method Code</u>
<b><u>SO Manual Methods</u></b>					
Reference method (pararosaniline)	--	097	Lear Siegler or Monitor Labs ML9830,	RFCA-0992-088	088
Technicon I (pararosaniline)	EQS-0775-001	097	Monitor Labs ML9830B, Wedding 1020	RFCA-1280-050	050
Technicon II (pararosaniline)	EQS-0775-002	097	MASS - CO 1 (Massachusetts)	RFCA-0979-041	041
			Monitor Labs 8310	RFCA-0388-066	066
			Monitor Labs or Lear Siegler 8830	RFCA-0177-018	018
			MSA 202S		
			Teledyne Advanced Pollution Instr. 300 or 300E		
			RFCA-1093-093	093	
			Thermo Electron or Thermo		
			Environmental Instruments 48, 48C	RFCA-0981-054	054
<b><u>SO Analyzers</u></b>					
Advanced Pollution Instr. 100	EQSA-0990-077	077			
Advanced Pollution Instr. 100A or					
Teledyne Analytical Instruments 6400A	EQSA-0495-100	100			
Asarco 500	EQSA-0877-024	024			
Beckman 953	EQSA-0678-029	029			
Bendix 8303	EQSA-1078-030	030			
Columbia Scientific Industries 5700	EQSA-0494-095	095			
Dasibi 4108	EQSA-1086-061	061			
DKK-TOA Corp. Model GFS-32	EQSA-0701-115	115			
DKK-TOA Corp. Model GFS-112E	EQSA-0100-133	133			
Environnement S.A. AF21M	EQSA-0292-084	084			
Environnement S.A. SANOA	EQSA-0400-138	138			
Horiba Model APSA-360/APSA-360ACE	EQSA-0197-114	114			
Lear Siegler AM2020	EQSA-1280-049	049			
Lear Siegler SM1000	EQSA-1275-005	005			
Lear Siegler or Monitor Labs ML9850,					
Monitor Labs ML9850B, Wedding 1040	EQSA-0193-092	092			
Meloy SA185-2A	EQSA-1275-006	006			
Meloy SA285E	EQSA-1078-032	032			
Meloy SA700	EQSA-0580-046	046			
Monitor Labs 8450	EQSA-0876-013	513			
Monitor Labs or Lear Siegler 8850	EQSA-0779-039	039			
Monitor Labs or Lear Siegler 8850S	EQSA-0390-075	075			
Opsis AR 500, System 300 (open path)	EQSA-0495-101	101			
Philips PW9700	EQSA-0876-011	511			
Philips PW9755	EQSA-0676-010	010			
Thermo Electron 43	EQSA-0276-009	009			
Thermo Electron 43A or Thermo					
Environmental Instruments 43B, 43C	EQSA-0486-060	060			
<b><u>O Analyzers</u></b>					
Advanced Pollution Instr. 400/400A	EQOA-0992-087	087			
Beckman 950A	RFOA-0577-020	020			
Bendix 8002	RFOA-0176-007	007			
Columbia Scientific Industries 2000	RFOA-0279-036	036			
Dasibi 1003-AH, -PC, -RS	EQOA-0577-019	019			
Dasibi 1008-AH, -PC, -RS	EQOA-0383-056	056			
DKK-TOA Corp. Model GUX-113E	EQOA-0200-134	134			
Envirionics 300	EQOA-0990-078	078			
Environnement S.A. O41M	EQOA-0895-105	105			
Environnement S.A. SANOA	EQOA-0400-137	137			
Horiba APOA-360	EQOA-0196-112	112			
Lear Siegler or Monitor Labs ML9810,					
Monitor Labs ML9810B, Wedding 1010	EQOA-0193-091	091			
McMillan 1100-1	RFOA-1076-014	514			
McMillan 1100-2	RFOA-1076-015	515			
McMillan 1100-3	RFOA-1076-016	016			
Meloy OA325-2R	RFOA-1075-003	003			
Meloy OA350-2R	RFOA-1075-004	004			
Monitor Labs 8410E	RFOA-1176-017	017			
Monitor Labs or Lear Siegler 8810	EQOA-0881-053	053			
Opsis AR 500, System 300 (open path)	EQOA-0495-103	103			
PCI Ozone Corp. LC-12	EQOA-0382-055	055			
Philips PW9771	EQOA-0777-023	023			
Thermo Electron or Thermo					
Environmental Instruments 49, 49C	EQOA-0880-047	047			
<b><u>CO Analyzers</u></b>					
Beckman 866	RFCA-0876-012	012			
Bendix 8501-5CA	RFCA-0276-008	008			
Dasibi 3003	RFCA-0381-051	051			
Dasibi 3008	RFCA-0488-067	067			
Environnement s.a. CO11M	RFCA-0995-108	108			
Horiba AQM-10, -11, -12	RFCA-1278-033	033			
Horiba 300E/300SE	RFCA-1180-048	048			
Horiba APMA-360	RFCA-0895-106	106			
<b><u>Pb Manual Methods</u></b>					
Reference method (hi-vol/AA spect.)	--				803
Hi-vol/AA spect. (alt. extr.)	EQL-0380-043				043
Hi-vol/Energy-disp XRF (TX ACB)	EQL-0783-058				058
Hi-vol/Energy-disp XRF (NEA)	EQL-0589-072				072
Hi-vol/Flameless AA (EMSL/EPA)	EQL-0380-044				044
Hi-vol/Flameless AA (Houston)	EQL-0895-107				107
Hi-vol/Flameless AA (Omaha)	EQL-0785-059				059
Hi-vol/ICAP spect. (Doe Run Co.)	EQL-0196-113				
113					
Hi-vol/ICAP spect. (EMSL/EPA)	EQL-0380-045				045
Hi-vol/ICAP spect. (Illinois)	EQL-1193-094				094
Hi-vol/ICAP spect. (Kansas)	EQL-0592-085				085
Hi-vol/ICAP spect. (Montana)	EQL-0483-057				057
Hi-vol/ICAP spect. (NE&T)	EQL-1188-069				069
Hi-vol/ICAP spect. (New Hampshire)	EQL-1290-080				080
Hi-vol/ICAP spect. (Pennsylvania)	EQL-0592-086				086
Hi-vol/ICAP spect. (Pima Co., AZ)	EQL-0995-109				109
Hi-vol/ICAP spect. (Pima Co., AZ)	EQL-0995-110				110
Hi-vol/ICAP spect. (Rhode Island)	EQL-0888-068				068
Hi-vol/ICAP spect. (Silver Val. Labs)	EQL-1288-070				070
Hi-vol/ICAP spect. (TNRCC)	EQL-0400-140				140
Hi-vol/ICAP spect. (West Virginia)	EQL-0694-096				096
Hi-vol/WL-disp. XRF (CA A&IHL)	EQL-0581-052				052
<b><u>PM<sub>10</sub> Samplers</u></b>					
Andersen Instruments RAAS10-100	RFPS-0699-130				130
Andersen Instruments RAAS10-200	RFPS-0699-131				131

Andersen Instruments RAAS10-300	RFPS-0699-132	132
BGI Model PQ100	RFPS-1298-124	124
BGI Model PQ200	RFPS-1298-125	125
Oregon DEQ Medium volume sampler	RFPS-0389-071	071
Rupprecht & Patashnick Partisol 2000	RFPS-0694-098	098
R & P Partisol-FRM Model 2000	RFPS-1298-126	126
R & P Partisol-Plus Model 2025 Seq.	RFPS-1298-127	127
Sierra-Andersen/GMW 1200	RFPS-1287-063	063
Sierra-Andersen/GMW 321-B	RFPS-1287-064	064
Sierra-Andersen/GMW 321-C	RFPS-1287-065	065
Sierra-Andersen/GMW 241 Dichot.	RFPS-0789-073	073
Tisch Environmental Model TE-6070	RFPS-0202-141	141
W&A/Thermo Electron Mod 600 HVL	RFPS-1087-062	062

#### PM<sub>10</sub> Analyzers

Andersen Instruments Beta FH62I-N	EQPM-0990-076	076
Met One BAM1020, GBAM1020, BAM1020-1, GBAM1020-1	EQPM-0798-122	122
R & P TEOM 1400, 1400a	EQPM-1090-079	079
W&A/Thermo Electron 650 Beta Gauge	EQPM-0391-081	081

#### PM<sub>2.5</sub> Samplers

Andersen Model RAAS2.5-200 Audit	RFPS-0299-128	128
BGI PQ200/200A	RFPS-0498-116	116
BGI PQ200-VSCC or PQ200A-VSCC	EQPM-0202-142	142
Graseby Andersen RAAS2.5-100	RFPS-0598-119	119
Graseby Andersen RAAS2.5-300	RFPS-0598-120	120
R & P Partisol-FRM 2000 PM-2.5	RFPS-0498-117	117
R & P Partisol-FRM 2000 PM-2.5 FEM	EQPM-0202-143	143
R & P Partisol 2000 PM-2.5 Audit	RFPS-0499-129	129
R & P Partisol 2000 PM-2.5 FEM Audit	EQPM-0202-144	144
R & P Partisol-Plus 2025 PM-2.5 Seq.	RFPS-0498-118	118
R & P Partisol-Plus 2025 PM-2.5 FEM Seq.	EQPM-0202-145	145
Thermo Environmental Model 605 CAPS	RFPS-1098-123	123
URG-MASS100	RFPS-0400-135	135
URG-MASS300	RFPS-0400-136	136

#### TSP Manual Method

Reference method (high-volume)	--	802
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